CLAIMS

1. A graphics processor, the graphics processor receiving image data, the graphics processor comprising:

   a linear-output gamma translator, the linear-output gamma translator translating the received image data into a substantially linear gamma space;

   a processor core, the processor core rendering the translated image data to create rendered image data; and

   a non-linear-output translator, the non-linear-output translator translating the rendered image data into a non-linear gamma space.

2. The graphics processor of claim 1 wherein the linear-output gamma translator comprises a lookup table.

3. The graphics processor of claim 1 wherein the linear-output gamma translator additionally converts the received image data into a higher bit representation.

4. The graphics processor of claim 3 wherein the higher bit representation comprises a floating point representation.

5. The graphics processor of claim 1 wherein the non-linear-output out put gamma translator additionally converts the rendered image data into a lower bit representation.

6. The graphics processor of claim 1 wherein the received image data includes graphics data and video data.

7. The graphics processor of claim 1 wherein the received image data is received from a memory.

8. The graphics processor of claim 1 wherein the linear-output gamma translator comprises an input translator, the input translator translating image data inputted into the graphics processor to a substantially linear gamma space.

9. The graphics processor of claim 1 wherein smooth shading of the image data is performed before the linear-output gamma translator translates the received image data into a substantially linear gamma space.

10. The graphics processor of claim 1 wherein the linear-output gamma translator comprises a memory read translator, the memory read translator translating image data read from a memory to a substantially linear gamma space, and wherein the non-linear-output gamma translator comprises a memory write gamma translator, the memory write gamma translator translating image data written to the memory to a non-linear gamma space.

11. The graphics processor of claim 1 wherein the non-linear gamma space representation comprises a gamma of approximately .45

12. The graphics processor of claim 1 wherein the processor core includes alpha blending logic, anti-aliasing logic and video merge logic, and wherein alpha blending, anti-aliasing and video merge are performed on the image data in the substantially linear gamma space.

13. The graphics processor of claim 1 wherein the linear-output gamma translator additionally converts the received image data into a higher bit representation, and wherein the non-linear-output gamma translator additionally converts the received graphics data into a lower bit representation, and wherein the higher bit representation comprises a 12-14 bit representation and wherein the lower bit representation comprises an 4-10 bit representation.

14. A method for rendering received image data in a graphics processor, the method comprising the steps of:

a) translating the received image data to a substantially linear gamma space;

a) rendering the translated image data to create rendered image data;

b) translating the rendered image data to a non-linear gamma space; and

d) outputting the non-linear gamma space rendered image data for display.

15. The method of claim 14 wherein the step of translating the received image data to a substantially linear gamma space comprises utilizing a lookup table.

16. The method of claim 14 wherein the step of translating the received image data to a substantially linear gamma space additionally converts the received image data into a higher bit representation.

17. The method of claim 14 wherein the step of translating the rendered image data to a non-linear gamma space additionally converts the received image data into a lower bit representation.

18. The method of claim 14 wherein the received image data includes graphics data and video data.

19. The method of claim 14 wherein the received image data is received from a memory.

20. The method of claim 14 further comprising the step of performing other rendering before the step of translating the received image data to a substantially linear gamma space.

21. The method of claim 20 wherein the other rendering comprises smooth shading.

22. The method of claim 14 wherein the step of translating the received image data to a substantially linear gamma space comprises translating image data received from a memory, and wherein the step of outputting the non-linear gamma space rendered image data for display comprises outputting to the memory.

23. A graphics processor, the graphics processor receiving image data, the graphics processor comprising:

an input gamma translator, the input gamma translator translating the received image data into a substantially linear gamma space and a higher bit representation;

a processor core, the processor core rendering the translated image data to create rendered image data; and

an output gamma translator, the output gamma translator translating the rendered image data into a non-linear gamma space output video data to a non-linear gamma space and a lower bit representation;

a memory write gamma translator, the memory write gamma translator translating image data written to a memory to a non-linear gamma space and a lower bit representation; and

a memory read gamma translator translating image data read from the memory to a substantially linear gamma space and a higher bit representation.

24. The graphics processor of claim 23 wherein input gamma translator and the output gamma translator comprise a lookup table.

25. The graphics processor of claim 23 wherein the higher bit representation comprises a 12-14 bit representation and wherein the lower bit representation comprises a 4-10 bit representation.

26. The graphics processor of claim 23 wherein the higher bit representation comprises a floating point representation.

27. The graphics processor of claim 23 wherein the received image data includes graphics data and video data.

28. The graphics processor of claim 23 wherein the processor core further includes a smooth shading function, and wherein the smooth shading function is performed on the image data before the input gamma translator translates the received image data into a substantially linear gamma space and a higher bit representation.